

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

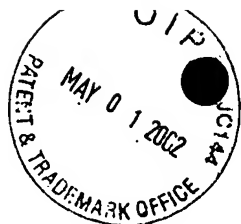
Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**



<110> Anderson, Marilyn, A., Lay, Fung T., Heath, Robyn, L.

<120> Plant-derived molecules and genetic sequences encoding same and uses therefor

<130> 18-01

<140> USSN 10/072,809

<141> 2002-02-08

<150> USSN 60/267,271

<151> 2001-02-08

<160> 61

<170> PatentIn version 3.0

<210> 1

<211> 28

<212> DNA

<213> primer

<400> 1  
ggaattccat atggctcgct ccttgtgc 28

<210> 2

<211> 29

<212> DNA

<213> primer

<400> 2  
gcggatcctc agttatccat tatctcttc . 29

<210> 3

<211> 24

<212> DNA

<213> primer

<400> 3  
ccggatccag agaatgcaaa acag 24

<210> 4

<211> 26

<212> DNA

<213> primer

<400> 4  
gggagctctt agttatccat tatctc 26

<210> 5

<211> 31

<212> DNA

<213> primer

<400> 5  
 ggaattctaa acaatggctc gctccttggtg c 31

<210> 6  
 <211> 29  
 <212> DNA  
 <213> primer

<400> 6  
 gctctagatc agttatccat tatctcttc 29

<210> 7  
 <211> 141  
 <212> DNA  
 <213> Nicotiana alata

<220>  
 <221> CDS  
 <222> (1)..(141)

<400> 7  
 aga gaa tgc aaa aca gaa agc aac aca ttt oct gga ata tgc att acc 48  
 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr  
 1 5 10 15

aaa cca cca tgc aga aaa gct tgt atc agt gag aaa ttt act gat ggt 96  
 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly  
 20 25 30

cat tgt agc aaa atc ctc aga agg tgc cta tgt act aag cca tgt 141  
 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys  
 35 40 45

<210> 8  
 <211> 47  
 <212> PRT  
 <213> Nicotiana alata

<400> 8  
 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr  
 1 5 10 15

Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly  
 20 25 30

His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys  
 35 40 45

<210> 9  
 <211> 75  
 <212> DNA  
 <213> Nicotiana alata

<220>  
 <221> CDS  
 <222> (1)..(75)

<400> 9  
 atg gct cgc tcc ttg tgc ttc atg gca ttt gct atc ttg gca agg atg 48  
 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met  
 1 5 10 15  
  
 ctc ttt gtt gcc tat gag gtg caa gct 75  
 Leu Phe Val Ala Tyr Glu Val Gln Ala  
 20 25  
  
 <210> 10  
 <211> 25  
 <212> PRT  
 <213> Nicotiana alata  
  
 <400> 10  
 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met  
 1 5 10 15  
  
 Leu Phe Val Ala Tyr Glu Val Gln Ala  
 20 25  
  
 <210> 11  
 <211> 99  
 <212> DNA  
 <213> Nicotiana alata  
  
 <220>  
 <221> CDS  
 <222> (1)..(99)  
  
 <400> 11  
 gtg ttt gat gag aag atg act aaa aca gga gct gaa att ttg gct gag 48  
 Val Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu  
 1 5 10 15  
  
 gaa gca aaa act ttg gct gca gct ttg ctt gaa gaa gag ata atg gat 96  
 Glu Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp  
 20 25 30  
  
 aac 99  
 Asn  
  
 <210> 12  
 <211> 33  
 <212> PRT  
 <213> Nicotiana alata  
  
 <400> 12  
 Val Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu  
 1 5 10 15  
  
 Glu Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp  
 20 25 30  
  
 Asn

<210> 13  
 <211> 216  
 <212> DNA  
 <213> Nicotiana alata

<220>  
 <221> CDS  
 <222> (1)..(216)

<400> 13  
 atg gct cgc tcc ttg tgc ttc atg gca ttt gct atc ttg gca agg atg 48  
 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met  
 1 5 10 15  
 ctc ttt gtt gcc tat gag gtg caa gct aga gaa tgc aaa aca gaa agc 96  
 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser  
 20 25 30  
 aac aca ttt cct gga ata tgc att acc aaa cca cca tgc aga aaa gct 144  
 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala  
 35 40 45  
 tgt atc agt gag aaa ttt act gat ggt cat tgt agc aaa atc ctc aga 192  
 Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg  
 50 55 60  
 agg tgc cta tgt act aag cca tgt 216  
 Arg Cys Leu Cys Thr Lys Pro Cys  
 65 70

<210> 14  
 <211> 72  
 <212> PRT  
 <213> Nicotiana alata

<400> 14  
 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met  
 1 5 10 15  
 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser  
 20 25 30  
 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala  
 35 40 45  
 Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg  
 50 55 60  
 Arg Cys Leu Cys Thr Lys Pro Cys  
 65 70

<210> 15  
 <211> 240  
 <212> DNA  
 <213> Nicotiana alata

<220>  
 <221> CDS  
 <222> (1)..(240)

<400> 15  
 aga gaa tgc aaa aca gaa agc aac aca ttt cct gga ata tgc att acc 48  
 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr  
 1 5 10 15  
 aaa cca cca tgc aga aaa gct tgt atc agt gag aaa ttt act gat ggt 96  
 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly  
 20 25 30  
 cat tgt agc aaa atc ctc aga agg tgc cta tgt act aag cca tgt gtg 144  
 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys Val  
 35 40 45  
 ttt gat gag aag atg act aaa aca gga gct gaa att ttg gct gag gaa 192  
 Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu Glu  
 50 55 60  
 gca aaa act ttg gct gca gct ttg ctt gaa gaa gag ata atg gat aac 240  
 Ala Lys Thr Leu Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn  
 65 70 75 80

<210> 16  
 <211> 80  
 <212> PRT  
 <213> Nicotiana alata

<400> 16  
 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr  
 1 5 10 15  
 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly  
 20 25 30  
 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys Val  
 35 40 45  
 Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu Glu  
 50 55 60  
 Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn  
 65 70 75 80

<210> 17  
 <211> 541  
 <212> DNA  
 <213> Nicotiana alata

<220>  
 <221> CDS  
 <222> (1)..(318)

<400> 17  
 atg gct cgc tcc ttg tgc ttc atg gca ttt gct atc ttg gca agg atg 48

Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met  
1 5 10 15

ctc ttt gtt gcc tat gag gtg caa gct aga gaa tgc aaa aca gaa agc 96  
Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser  
20 25 30

aac aca ttt cct gga ata tgc att acc aaa cca cca tgc aga aaa gct 144  
Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala  
35 40 45

tgt atc agt gag aaa ttt act gat ggt cat tgt agc aaa atc ctc aga 192  
Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg  
50 55 60

agg tgc cta tgt act aag cca tgt gtg ttt gat gag aag atg act aaa 240  
Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Thr Lys  
65 70 75 80

aca gga gct gaa att ttg gct gag gaa gca aaa act ttg gct gca gct 288  
Thr Gly Ala Glu Ile Leu Ala Glu Glu Ala Lys Thr Leu Ala Ala Ala  
85 90 95

ttg ctt gaa gaa gag ata atg gat aac taa ttagagatta gaagaaatta 338  
Leu Leu Glu Glu Glu Ile Met Asp Asn  
100 105

aggatgcagt atcacacata ataaagtttc taccttttctt aaaagtgtag ctaatgttgt 398

gttttaattg gcttttagta gccttttatt acacttttaa taagtgtggc acttcaatcc 458

tttgtgcaat cttgcactaa gtttatttgt gtacttttaa tgaaaatgac cttctatggt 518

ctttggttaa aaaaaaaaaa aaa 541

<210> 18  
<211> 105  
<212> PRT  
<213> Nicotiana alata

<400> 18  
Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met  
1 5 10 15

Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser  
20 25 30

Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala  
35 40 45

Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg  
50 55 60

Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Thr Lys  
65 70 75 80

Thr Gly Ala Glu Ile Leu Ala Glu Glu Ala Lys Thr Leu Ala Ala Ala  
85 90 95

Leu Leu Glu Glu Glu Ile Met Asp Asn  
100 105

<210> 19  
<211> 223  
<212> DNA  
<213> Nicotiana alata

<400> 19  
ttagagatta gaagaaatta aggatgcagt atcacacata ataaagtttc tacctttctt 60  
aaaagtgtag ctaatgttgt gttttaattg gcttttagta gccttttatt acactttaaa 120  
taagtgtggc acttcaatcc tttgtgcaat cttgcactaa gtttatttgt gtacttttaa 180  
tgaaaatgac cttctatggc ctttggttaa aaaaaaaaaa aaa 223

<210> 20  
<211> 105  
<212> PRT  
<213> peptide

<400> 20  
Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Met Met  
1 5 10 15

Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser  
20 25 30

Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala  
35 40 45

Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Leu Leu Arg  
50 55 60  
Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Ile Lys  
65 70 75 80

Thr Gly Ala Glu Thr Leu Val Glu Glu Ala Lys Thr Leu Ala Ala Ala  
85 90 95

Leu Leu Glu Glu Glu Ile Met Asp Asn  
100 105

<210> 21  
<211> 105  
<212> PRT  
<213> peptide

<400> 21  
Met Ala Arg Ser Ile Phe Phe Met Ala Phe Leu Val Leu Ala Met Met  
1 5 10 15

Leu Phe Val Thr Tyr Glu Val Glu Ala Gln Gln Ile Cys Lys Ala Pro  
20 25 30

Ser Gln Thr Phe Pro Gly Leu Cys Phe Met Asp Ser Ser Cys Arg Lys  
35 40 45

Tyr Cys Ile Lys Glu Lys Phe Thr Gly Gly His Cys Ser Lys Leu Gln  
50 55 60

Arg Lys Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Lys Ile Ser Ser  
65 70 75 80

Glu Val Lys Ala Thr Leu Gly Glu Glu Ala Lys Thr Leu Ser Glu Val  
85 90 95

Val Leu Glu Glu Glu Ile Met Met Glu  
100 105

<210> 22  
<211> 78  
<212> PRT  
<213> peptide

<400> 22  
Met Ala Asn Ser Met Arg Phe Phe Ala Thr Val Leu Leu Ile Ala Leu  
1 5 10 15

Leu Val Thr Ala Thr Glu Met Gly Pro Met Thr Ile Ala Glu Ala Arg  
20 25 30

Thr Cys Glu Ser Gln Ser His Arg Phe Lys Gly Pro Cys Ser Arg Asp  
35 40 45

Ser Asn Cys Ala Thr Val Cys Leu Thr Glu Gly Phe Ser Gly Gly Arg  
50 55 60

Cys Pro Trp Ile Pro Pro Arg Cys Phe Cys Thr Ser Pro Cys  
65 70 75

<210> 23  
<211> 78  
<212> PRT  
<213> peptide

<400> 23  
Met Gly Arg Ser Ile Arg Leu Phe Ala Thr Phe Phe Leu Ile Ala Met  
1 5 10 15

Leu Phe Leu Ser Thr Glu Met Gly Pro Met Thr Ser Ala Glu Ala Arg  
20 25 30

Thr Cys Glu Ser Gln Ser His Arg Phe His Gly Thr Cys Val Arg Glu  
35 40 45

Ser Asn Cys Ala Ser Val Cys Gln Thr Glu Gly Phe Ile Gly Gly Asn  
50 55 60

Cys Arg Ala Phe Arg Arg Arg Cys Phe Cys Thr Arg Asn Cys  
65 70 75

<210> 24  
 <211> 77  
 <212> PRT  
 <213> peptide

<400> 24  
 Met Lys Leu Ser Met Arg Leu Ile Ser Ala Val Leu Ile Met Phe Met  
 1 5 10 15  
 Ile Phe Val Ala Thr Gly Met Gly Pro Val Thr Val Glu Ala Arg Thr  
 20 25 30  
 Cys Glu Ser Gln Ser His Arg Phe Lys Gly Thr Cys Val Ser Ala Ser  
 35 40 45  
 Asn Cys Ala Asn Val Cys His Asn Glu Gly Phe Val Gly Gly Asn Cys  
 50 55 60  
 Arg Gly Phe Arg Arg Arg Cys Phe Cys Thr Arg His Cys  
 65 70 75

<210> 25  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 25  
 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr  
 1 5 10 15  
 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly  
 20 25 30  
 His Cys Ser Lys Leu Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys  
 35 40 45

<210> 26  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 26  
 Gln Ile Cys Lys Ala Pro Ser Gln Thr Phe Pro Gly Leu Cys Phe Met  
 1 5 10 15  
 Asp Ser Ser Cys Arg Lys Tyr Cys Ile Lys Glu Lys Phe Thr Gly Gly  
 20 25 30  
 His Cys Ser Lys Leu Gln Arg Lys Cys Leu Cys Thr Lys Pro Cys  
 35 40 45

<210> 27  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 27  
 Arg His Cys Glu Ser Leu Ser His Arg Phe Lys Gly Pro Cys Thr Arg  
 1 5 10 15

Asp Ser Asn Cys Ala Ser Val Cys Glu Thr Glu Arg Phe Ser Gly Gly  
 20 25 30

Asn Cys His Gly Phe Arg Arg Arg Cys Phe Cys Thr Lys Pro Cys  
 35 40 45

<210> 28  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 28  
 Arg Val Cys Glu Ser Gln Ser His Gly Phe His Gly Leu Cys Asn Arg  
 1 5 10 15

Asp His Asn Cys Ala Leu Val Cys Arg Asn Glu Gly Phe Ser Gly Gly  
 20 25 30

Arg Cys Lys Gly Phe Arg Arg Arg Cys Phe Cys Thr Arg Ile Cys  
 35 40 45

<210> 29  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 29  
 Arg Thr Cys Glu Ser Gln Ser His Arg Phe His Gly Thr Cys Val Arg  
 1 5 10 15

Glu Ser Asn Cys Ala Ser Val Cys Gln Thr Glu Gly Phe Ile Gly Gly  
 20 25 30

Asn Cys Arg Ala Phe Arg Arg Arg Cys Phe Cys Thr Arg Asn Cys  
 35 40 45

<210> 30  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 30  
 Arg Ile Cys Arg Arg Arg Ser Ala Gly Phe Lys Gly Pro Cys Val Ser  
 1 5 10 15

Asn Lys Asn Cys Ala Gln Val Cys Met Gln Glu Trp Gly Glu Gly Gly  
 20 25 30

Asn Cys Asp Gly Pro Leu Arg Arg Cys Lys Cys Met Arg Arg Cys  
 35 40 45

<210> 31  
<211> 51  
<212> PRT  
<213> peptide

<400> 31  
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
1 5 10 15  
Asn Asn Asn Ala Cys Arg Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
20 25 30  
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
35 40 45  
Phe Pro Cys  
50

<210> 32  
<211> 20  
<212> PRT  
<213> peptide

<400> 32  
Arg Asn Cys Glu Ser Leu Ser His Arg Phe Lys Gly Pro Cys Thr Arg  
1 5 10 15  
Asp Ser Asn Cys  
20

<210> 33  
<211> 51  
<212> PRT  
<213> peptide

<400> 33  
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
1 5 10 15  
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
20 25 30  
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
35 40 45  
Phe Pro Cys  
50

<210> 34  
<211> 51  
<212> PRT  
<213> peptide

<400> 34  
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 35  
 <211> 51  
 <212> PRT  
 <213> peptide

<400> 35  
 Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 36  
 <211> 52  
 <212> PRT  
 <213> peptide

<400> 36  
 Gln Lys Leu Cys Ala Arg Pro Ser Gly Thr Trp Ser Ser Gly Asn Cys  
 1 5 10 15

Arg Asn Asn Asn Ala Cys Arg Asn Phe Cys Ile Lys Leu Glu Lys Ser  
 20 25 30

Arg His Gly Ser Cys Asn Ile Pro Phe Pro Ser Asn Lys Cys Ile Cys  
 35 40 45

Tyr Phe Pro Cys  
 50

<210> 37  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 37  
 Lys Ile Cys Arg Arg Arg Ser Ala Gly Phe Lys Gly Pro Cys Met Ser  
 1 5 10 15

Asn Lys Asn Cys Ala Gln Val Cys Gln Gln Glu Gly Trp Gly Gly Gly  
 20 25 30

Asn Cys Asp Gly Pro Phe Arg Arg Cys Lys Cys Ile Arg Gln Cys  
35 40 45

<210> 38  
<211> 47  
<212> PRT  
<213> peptide

<400> 38  
Lys Val Cys Arg Gln Arg Ser Ala Gly Phe Lys Gly Pro Cys Val Ser  
1 5 10 15

Asp Lys Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly Gly  
20 25 30

Asn Cys Asp Gly Pro Phe Arg Arg Cys Lys Cys Ile Arg Gln Cys  
35 40 45

<210> 39  
<211> 47  
<212> PRT  
<213> peptide

<400> 39  
Lys Thr Cys Glu Asn Leu Val Asp Thr Tyr Arg Gly Pro Cys Phe Thr  
1 5 10 15

Thr Gly Ser Cys Asp Asp His Cys Lys Asn Lys Glu His Leu Leu Ser  
20 25 30

Gly Arg Cys Arg Asp Asp Val Arg Cys Trp Cys Thr Arg Asn Cys  
35 40 45

<210> 40  
<211> 48  
<212> PRT  
<213> peptide

<400> 40  
Arg Val Cys Met Gly Lys Ser Ala Gly Phe Lys Gly Leu Cys Met Arg  
1 5 10 15

Asp Gln Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly Gly  
20 25 30

Asn Cys Asp Gly Val Met Arg Gln Cys Lys Cys Ile Arg Gln Cys Trp  
35 40 45

<210> 41  
<211> 48  
<212> PRT  
<213> peptide

<400> 41  
Arg Val Cys Arg Arg Arg Ser Ala Gly Phe Lys Gly Leu Cys Met Ser  
1 5 10 15

Asp His Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly Gly  
 20 25 30

Asn Cys Asp Gly Val Ile Arg Gln Cys Lys Cys Ile Arg Gln Cys Trp  
 35 40 45

<210> 42  
 <211> 20  
 <212> PRT  
 <213> peptide

<400> 42  
 Glu Val Cys Glu Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn  
 1 5 10 15

Thr Gly His Cys  
 20

<210> 43  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 43  
 Arg Val Cys Met Lys Gly Ser Gln His His Ser Phe Pro Cys Ile Ser  
 1 5 10 15

Asp Arg Leu Cys Ser Asn Glu Cys Val Lys Glu Glu Gly Gly Trp Thr  
 20 25 30

Ala Gly Tyr Cys His Leu Arg Tyr Cys Arg Cys Gln Lys Ala Cys  
 35 40 45

<210> 44  
 <211> 45  
 <212> PRT  
 <213> peptide

<400> 44  
 Asn Thr Cys Glu Asn Leu Ala Gly Ser Tyr Lys Gly Val Cys Phe Gly  
 1 5 10 15

Gly Cys Asp Arg His Cys Arg Thr Gln Glu Gly Ala Ile Ser Gly Arg  
 20 25 30

Cys Arg Asp Asp Phe Arg Cys Trp Cys Thr Lys Asn Cys  
 35 40 45

<210> 45  
 <211> 50  
 <212> PRT  
 <213> peptide

<400> 45  
 Leu Cys Asn Glu Arg Pro Ser Gln Thr Trp Ser Gly Asn Cys Gly Asn  
 1 5 10 15

Thr Ala His Cys Asp Lys Gln Cys Gln Asp Trp Glu Lys Ala Ser His  
 20 25 30

Gly Ala Cys His Lys Arg Glu Asn His Trp Lys Cys Phe Cys Tyr Phe  
 35 40 45

Asn Cys  
 50

<210> 46  
 <211> 51  
 <212> PRT  
 <213> peptide

<400> 46  
 Lys Leu Cys Asp Val Pro Ser Gly Thr Trp Ser Gly His Cys Gly Ser  
 1 5 10 15

Ser Ser Lys Cys Ser Gln Gln Cys Lys Asp Arg Glu His Phe Ala Tyr  
 20 25 30

Gly Gly Ala Cys His Tyr Gln Phe Pro Ser Val Lys Cys Phe Cys Lys  
 35 40 45

Arg Gln Cys  
 50

<210> 47  
 <211> 50  
 <212> PRT  
 <213> peptide

<400> 47  
 Glu Leu Cys Glu Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn  
 1 5 10 15

Thr Gly His Cys Asp Asn Gln Cys Lys Ser Trp Glu Gly Ala Ala His  
 20 25 30

Gly Ala Cys His Val Arg Asn Gly Lys His Met Cys Phe Cys Tyr Phe  
 35 40 45

Asn Cys  
 50

<210> 48  
 <211> 46  
 <212> PRT  
 <213> peptide

<400> 48  
 Asn Thr Cys Glu His Leu Ala Asp Thr Tyr Arg Gly Val Cys Phe Thr  
 1 5 10 15

Asn Ala Ser Cys Asp Asp His Cys Lys Asn Lys Ala His Leu Ile Ser  
 20 25 30

Gly Thr Cys His Asp Trp Lys Cys Phe Cys Thr Gln Asn Cys  
 35 40 45

<210> 49  
 <211> 49  
 <212> PRT  
 <213> peptide

<400> 49  
 Asn Leu Cys Glu Arg Ala Ser Leu Thr Trp Thr Gly Asn Cys Gly Asn  
 1 5 10 15

Thr Gly His Cys Asp Thr Gln Cys Arg Asn Trp Glu Ser Ala Lys His  
 20 25 30

Gly Ala Cys His Lys Arg Gly Asn Trp Lys Cys Phe Cys Tyr Phe Asn  
 35 40 45

Cys

<210> 50  
 <211> 79  
 <212> PRT  
 <213> peptide

<400> 50  
 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Ala Arg Glu Ile  
 1 5 10 15

Phe Thr Gly Leu Cys Ile Thr Asn Pro Gln Cys Arg Lys Ala Cys Ile  
 20 25 30

Lys Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg Arg Cys  
 35 40 45

Leu Cys Thr Lys Pro Cys Thr Gly Ala Glu Thr Leu Ala Glu Glu Ala  
 50 55 60

Thr Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn  
 65 70 75

<210> 51  
 <211> 105  
 <212> PRT  
 <213> peptide

<400> 51  
 Met Ala Arg Ser Val Cys Phe Met Ala Phe Ala Ile Leu Ala Val Met  
 1 5 10 15

Leu Phe Val Ala Tyr Asp Val Glu Ala Lys Asp Cys Lys Thr Glu Ser  
 20 25 30

Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala  
 35 40 45

Cys Ile Lys Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg  
50 55 60

Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Ile Lys  
65 70 75 80

Thr Gly Ala Glu Thr Leu Ala Glu Glu Ala Thr Thr Leu Ala Ala Ala  
85 90 95

Leu Leu Glu Glu Glu Ile Met Asp Asn  
100 105

<210> 52  
<211> 106  
<212> PRT  
<213> peptide

<400> 52  
Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Val Leu Ala Met Met  
1 5 10 15

Leu Phe Val Ala Tyr Glu Val Gln Ala Lys Ser Thr Cys Lys Ala Glu  
20 25 30

Ser Asn Thr Phe Pro Gly Leu Cys Ile Thr Lys Pro Pro Cys Arg Lys  
35 40 45

Ala Cys Leu Ser Glu Lys Phe Thr Asp Gly Lys Cys Ser Lys Ile Leu  
50 55 60

Arg Arg Cys Ile Cys Tyr Lys Pro Cys Val Phe Asp Gly Lys Met Ile  
65 70 75 80

Gln Thr Gly Ala Glu Asn Leu Ala Glu Glu Ala Glu Thr Leu Ala Ala  
85 90 95

Ala Leu Leu Glu Glu Glu Met Met Asp Asn  
100 105

<210> 53  
<211> 47  
<212> PRT  
<213> peptide

<400> 53  
Arg Thr Cys Glu Ser Gln Ser His Arg Phe Lys Gly Pro Cys Ser Arg  
1 5 10 15

Asp Ser Asn Cys Ala Thr Val Cys Leu Thr Glu Gly Phe Ser Gly Gly  
20 25 30

Arg Cys Pro Trp Ile Pro Pro Arg Cys Phe Cys Thr Ser Pro Cys  
35 40 45

<210> 54  
 <211> 19  
 <212> PRT  
 <213> peptide

<400> 54  
 Arg Thr Cys Glu Ser Gln Ser His Arg Phe His Gly Thr Cys Val Arg  
 1 5 10 15

Glu Ser Asn

<210> 55  
 <211> 47  
 <212> PRT  
 <213> peptide

<400> 55  
 Arg Thr Cys Glu Ser Gln Ser His Arg Phe Lys Gly Thr Cys Val Ser  
 1 5 10 15

Ala Ser Asn Cys Ala Asn Val Cys His Asn Glu Gly Phe Val Gly Gly  
 20 25 30

Asn Cys Arg Gly Phe Arg Arg Arg Cys Phe Cys Thr Arg His Cys  
 35 40 45

<210> 56  
 <211> 1104  
 <212> DNA  
 <213> Nicotiana alata

<220>  
 <221> CDS  
 <222> (1)..(1104)

<400> 56  
 aag gct tgt acc tta aac tgt gat cca aga att gcc tat gga gtt tgc 48  
 Lys Ala Cys Thr Leu Asn Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys  
 1 5 10 15

ccg cgt tca gaa gaa aag aag aat gat cgg ata tgc acc aac tgt tgc 96  
 Pro Arg Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys  
 20 25 30

gca ggc acg aag ggt tgt aag tac ttc agt gat gat gga act ttt gtt 144  
 Ala Gly Thr Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val  
 35 40 45

tgt gaa gga gag tct gat cct aga aat cca aag gct tgt acc tta aac 192  
 Cys Glu Gly Glu Ser Asp Pro Arg Asn Pro Lys Ala Cys Thr Leu Asn  
 50 55 60

tgt gat cca aga att gcc tat gga gtt tgc ccg cgt tca gaa gaa aag 240  
 Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys Pro Arg Ser Glu Glu Lys  
 65 70 75 80

aag aat gat cgg ata tgc acc aac tgt tgc gca ggc acg aag ggt tgt 288

Lys	Asn	Asp	Arg	Ile	Cys	Thr	Asn	Cys	Cys	Ala	Gly	Thr	Lys	Gly	Cys		
				85					90					95			
aag	tac	ttc	agt	gat	gat	gga	act	ttt	gtt	tgt	gaa	gga	gag	tct	gat		336
Lys	Tyr	Phe	Ser	Asp	Asp	Gly	Thr	Phe	Val	Cys	Glu	Gly	Glu	Ser	Asp		
			100					105					110				
cct	aga	aat	cca	aag	gct	tgt	cct	cgg	aat	tgc	gat	cca	aga	att	gcc		384
Pro	Arg	Asn	Pro	Lys	Ala	Cys	Pro	Arg	Asn	Cys	Asp	Pro	Arg	Ile	Ala		
			115				120					125					
tat	ggg	att	tgc	cca	ctt	gca	gaa	gaa	aag	aag	aat	gat	cgg	ata	tgc		432
Tyr	Gly	Ile	Cys	Pro	Leu	Ala	Glu	Glu	Lys	Lys	Asn	Asp	Arg	Ile	Cys		
	130					135					140						
acc	aac	tgt	tgc	gca	ggc	aaa	aag	ggc	tgt	aag	tac	ttt	agt	gat	gat		480
Thr	Asn	Cys	Cys	Ala	Gly	Lys	Lys	Gly	Cys	Lys	Tyr	Phe	Ser	Asp	Asp		
	145				150				155					160			
gga	act	ttt	gtt	tgt	gaa	gga	gag	tct	gat	cct	aaa	aat	cca	aag	gcc		528
Gly	Thr	Phe	Val	Cys	Glu	Gly	Glu	Ser	Asp	Pro	Lys	Asn	Pro	Lys	Ala		
			165					170					175				
tgt	cct	cgg	aat	tgt	gat	gga	aga	att	gcc	tat	ggg	att	tgc	cca	ctt		576
Cys	Pro	Arg	Asn	Cys	Asp	Gly	Arg	Ile	Ala	Tyr	Gly	Ile	Cys	Pro	Leu		
			180					185					190				
tca	gaa	gaa	aag	aag	aat	gat	cgg	ata	tgc	acc	aac	tgc	tgc	gca	ggc		624
Ser	Glu	Glu	Lys	Lys	Asn	Asp	Arg	Ile	Cys	Thr	Asn	Cys	Cys	Ala	Gly		
		195					200					205					
aaa	aag	ggc	tgt	aag	tac	ttt	agt	gat	gat	gga	act	ttt	gtt	tgt	gaa		672
Lys	Lys	Gly	Cys	Lys	Tyr	Phe	Ser	Asp	Asp	Gly	Thr	Phe	Val	Cys	Glu		
	210					215					220						
gga	gag	tct	gat	cct	aaa	aat	cca	aag	gct	tgt	cct	cgg	aat	tgt	gat		720
Gly	Glu	Ser	Asp	Pro	Lys	Asn	Pro	Lys	Ala	Cys	Pro	Arg	Asn	Cys	Asp		
	225				230				235					240			
gga	aga	att	gcc	tat	ggg	att	tgc	cca	ctt	tca	gaa	gaa	aag	aag	aat		768
Gly	Arg	Ile	Ala	Tyr	Gly	Ile	Cys	Pro	Leu	Ser	Glu	Glu	Lys	Lys	Asn		
			245					250					255				
gat	cgg	ata	tgc	aca	aac	tgt	tgc	gca	ggc	aaa	aag	ggc	tgt	aag	tac		816
Asp	Arg	Ile	Cys	Thr	Asn	Cys	Cys	Ala	Gly	Lys	Lys	Gly	Cys	Lys	Tyr		
			260					265					270				
ttt	agt	gat	gat	gga	act	ttt	gtt	tgt	gaa	gga	gag	tct	gat	cct	aga		864
Phe	Ser	Asp	Asp	Gly	Thr	Phe	Val	Cys	Glu	Gly	Glu	Ser	Asp	Pro	Arg		
		275					280					285					
aat	cca	aag	gcc	tgt	cct	cgg	aat	tgt	gat	gga	aga	att	gcc	tat	gga		912
Asn	Pro	Lys	Ala	Cys	Pro	Arg	Asn	Cys	Asp	Gly	Arg	Ile	Ala	Tyr	Gly		
	290					295					300						

att tgc cca ctt tca gaa gaa aag aag aat gat cgg ata tgc acc aat 960  
 Ile Cys Pro Leu Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn  
 305 310 315 320

tgt tgc gca ggc aag aag ggc tgt aag tac ttt agt gat gat gga act 1008  
 Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr  
 325 330 335

ttt att tgt gaa gga gaa tct gaa tat gcc agc aaa gtg gat gaa tat 1056  
 Phe Ile Cys Glu Gly Glu Ser Glu Tyr Ala Ser Lys Val Asp Glu Tyr  
 340 345 350

gtt ggt gaa gtg gag aat gat ctc cag aag tct aag gtt gct gtt tcc 1104  
 Val Gly Glu Val Glu Asn Asp Leu Gln Lys Ser Lys Val Ala Val Ser  
 355 360 365

<210> 57

<211> 368

<212> PRT

<213> Nicotiana alata

<400> 57

Lys Ala Cys Thr Leu Asn Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys  
 1 5 10 15

Pro Arg Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys  
 20 25 30

Ala Gly Thr Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val  
 35 40 45

Cys Glu Gly Glu Ser Asp Pro Arg Asn Pro Lys Ala Cys Thr Leu Asn  
 50 55 60

Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys Pro Arg Ser Glu Glu Lys  
 65 70 75 80

Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Thr Lys Gly Cys  
 85 90 95

Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp  
 100 105 110

Pro Arg Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp Pro Arg Ile Ala  
 115 120 125

Tyr Gly Ile Cys Pro Leu Ala Glu Glu Lys Lys Asn Asp Arg Ile Cys  
 130 135 140

Thr Asn Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp  
 145 150 155 160

Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Lys Asn Pro Lys Ala  
 165 170 175

Cys Pro Arg Asn Cys Asp Gly Arg Ile Ala Tyr Gly Ile Cys Pro Leu  
 180 185 190

Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly  
 195 200 205

Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val Cys Glu  
 210 215 220

Gly Glu Ser Asp Pro Lys Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp  
 225 230 235 240

Gly Arg Ile Ala Tyr Gly Ile Cys Pro Leu Ser Glu Glu Lys Lys Asn  
 245 250 255

Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr  
 260 265 270

Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Arg  
 275 280 285

Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp Gly Arg Ile Ala Tyr Gly  
 290 295 300

Ile Cys Pro Leu Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn  
 305 310 315 320

Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr  
 325 330 335

Phe Ile Cys Glu Gly Glu Ser Glu Tyr Ala Ser Lys Val Asp Glu Tyr  
 340 345 350

Val Gly Glu Val Glu Asn Asp Leu Gln Lys Ser Lys Val Ala Val Ser  
 355 360 365

```

<210> 58
<211> 47
<212> PRT
<213> Nicotiana alata

<220>
<221> misc_feature
<222> (1)..(1)
<223> X = R or Q

<220>
<221> misc_feature
<222> (2)..(2)
<223> X = E or I or T

<220>
<221> misc_feature
<222> (2)..(2)
<223> X = E or I or T

<220>
<221> misc_feature
<222> (4)..(4)
<223> X = K or E

<220>
<221> misc_feature
<222> (5)..(5)
<223> X = T or A or S

<220>
<221> misc_feature
<222> (6)..(6)
<223> X = E or P or Q

<220>
<221> misc_feature
<222> (8)..(8)
<223> X = N or Q or H

<220>
<221> misc_feature
<222> (9)..(9)
<223> X = T or R

<220>
<221> misc_feature
<222> (11)..(11)
<223> X = P or K or H

<220>
<221> misc_feature
<222> (13)..(13)
<223> X = I or L or P or T

```

<220>  
<221> misc\_feature  
<222> (15)..(15)  
<223> X = I or F or S or V

<220>  
<221> misc\_feature  
<222> (16)..(16)  
<223> X = T or M or R or S

<220>  
<221> misc\_feature  
<222> (17)..(17)  
<223> X = K or D or E or A

<220>  
<221> misc\_feature  
<222> (18)..(18)  
<223> X = P or S

<220>  
<221> misc\_feature  
<222> (19)..(19)  
<223> X = P or S or N

<220>  
<221> misc\_feature  
<222> (21)..(21)  
<223> X = R or A

<220>  
<221> misc\_feature  
<222> (22)..(22)  
<223> X = K or T or S or N

<220>  
<221> misc\_feature  
<222> (23)..(23)  
<223> X = A or Y or V

<220>  
<221> misc\_feature  
<222> (25)..(25)  
<223> X = I or L or Q or H

<220>  
<221> misc\_feature  
<222> (26)..(26)  
<223> X = S or K or T or N

<220>  
<221> misc\_feature  
<222> (28)..(28)  
<223> X = K or G

<220>  
<221> misc\_feature  
<222> (30)..(30)  
<223> X = T or S or I or V

<220>  
<221> misc\_feature  
<222> (31)..(31)  
<223> X = D or G

<220>  
<221> misc\_feature  
<222> (33)..(33)  
<223> X = H or R or N

<220>  
<221> misc\_feature  
<222> (35)..(35)  
<223> X = S or P or R

<220>  
<221> misc\_feature  
<222> (36)..(36)  
<223> X = K or W or A or G

<220>  
<221> misc\_feature  
<222> (37)..(37)  
<223> X = I or L or F

<220>  
<221> misc\_feature  
<222> (38)..(38)  
<223> X = L or Q or P or R

<220>  
<221> misc\_feature  
<222> (39)..(39)  
<223> X = R or P

<220>  
<221> misc\_feature  
<222> (40)..(40)  
<223> X = R or K

<220>  
<221> misc\_feature  
<222> (42)..(42)  
<223> X = L or F

<220>  
<221> misc\_feature  
<222> (45)..(45)  
<223> X = K or S or R

<400> 58  
Xaa Xaa Cys Xaa Xaa Xaa Ser Xaa Xaa Phe Xaa Gly Xaa Cys Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa Glu Xaa Phe Xaa Xaa Gly  
20 25 30

Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Cys Thr Xaa Xaa Cys  
35 40 45

<210> 59  
<211> 32  
<212> PRT  
<213> Nicotiana alata

<220>  
<221> misc\_feature  
<222> (2)..(2)  
<223> X = A or G or K

<220>  
<221> misc\_feature  
<222> (3)..(3)  
<223> X = R or N or L

<220>  
<221> misc\_feature  
<222> (5)..(5)  
<223> X = L or I or M

<220>  
<221> misc\_feature  
<222> (6)..(6)  
<223> X = C or F or R

<220>  
<221> misc\_feature  
<222> (7)..(7)  
<223> X = F or L

<220>  
<221> misc\_feature  
<222> (8)..(8)  
<223> X = M or F or I

<220>  
<221> misc\_feature  
<222> (9)..(9)  
<223> X = A or S

<220>  
<221> misc\_feature  
<222> (10)..(10)  
<223> X = F or T or A

<220>  
<221> misc\_feature  
<222> (11)..(11)  
<223> X = A or L or V or F

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> X = I or V or L or F

<220>  
<221> misc\_feature  
<222> (13)..(13)  
<223> X = L or I

<220>  
<221> misc\_feature  
<222> (14)..(14)  
<223> X = A or I or M

<220>  
<221> misc\_feature  
<222> (15)..(15)  
<223> X = M or A or F

<220>  
<221> misc\_feature  
<222> (16)..(16)  
<223> X = M or L

<220>  
<221> misc\_feature  
<222> (17)..(17)  
<223> X = L or I

<220>  
<221> misc\_feature  
<222> (18)..(18)  
<223> X = F or V

<220>  
<221> misc\_feature  
<222> (19)..(19)  
<223> X = V or T or L

<220>  
<221> misc\_feature  
<222> (20)..(20)  
<223> X = A or T or S

<220>  
<221> misc\_feature  
<222> (21)..(21)  
<223> X = Y or T

```

<220>
<221> misc_feature
<222> (22)..(22)
<223> X = E or G

<220>
<221> misc_feature
<222> (23)..(23)
<223> X = V or M

<220>
<221> misc_feature
<222> (24)..(24)
<223> X = no amino acid or G

<220>
<221> misc_feature
<222> (25)..(25)
<223> X = no amino acid or P

<220>
<221> misc_feature
<222> (26)..(26)
<223> X = no amino acid or M or V

<220>
<221> misc_feature
<222> (27)..(27)
<223> X = no amino acid or T

<220>
<221> misc_feature
<222> (28)..(28)
<223> X = no amino acid or I or S

<220>
<221> misc_feature
<222> (29)..(29)
<223> X = no amino acid or A or V

<220>
<221> misc_feature
<222> (30)..(30)
<223> X = Q or E

<220>
<221> misc_feature
<222> (32)..(32)
<223> X = no amino acid or Q

<400> 59
Met Xaa Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1          5          10          15
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Xaa
          20          25          30

```

```

<210> 60
<211> 33
<212> PRT
<213> Nicotiana alata

<220>
<221> misc_feature
<222> (1)..(1)
<223> X = no amino acid or V

<220>
<221> misc_feature
<222> (2)..(2)
<223> X = no amino acid or F

<220>
<221> misc_feature
<222> (3)..(3)
<223> X = no amino acid or D

<220>
<221> misc_feature
<222> (4)..(4)
<223> X = no amino acid or E or K

<220>
<221> misc_feature
<222> (5)..(5)
<223> X = no amino acid or K or I

<220>
<221> misc_feature
<222> (6)..(6)
<223> X = no amino acid or M or S

<220>
<221> misc_feature
<222> (7)..(7)
<223> X = no amino acid or T or I or S

<220>
<221> misc_feature
<222> (8)..(8)
<223> X = no amino acid or K or E

<220>
<221> misc_feature
<222> (9)..(9)
<223> X = no amino acid or T or V

<220>
<221> misc_feature
<222> (10)..(10)
<223> X = no amino acid or G or K

```

```

<220>
<221> misc_feature
<222> (11)..(11)
<223> X = no amino acid or A

<220>
<221> misc_feature
<222> (12)..(12)
<223> X = no amino acid or E

<220>
<221> misc_feature
<222> (13)..(13)
<223> X = no amino acid or I or T

<220>
<221> misc_feature
<222> (14)..(14)
<223> X = no amino acid or L

<220>
<221> misc_feature
<222> (15)..(15)
<223> X = no amino acid or A or V or G

<220>
<221> misc_feature
<222> (16)..(16)
<223> X = no amino acid or E

<220>
<221> misc_feature
<222> (17)..(17)
<223> X = no amino acid or E

<220>
<221> misc_feature
<222> (18)..(18)
<223> X = no amino acid or A

<220>
<221> misc_feature
<222> (19)..(19)
<223> X = no amino acid or K

<220>
<221> misc_feature
<222> (20)..(20)
<223> X = no amino acid or T

<220>
<221> misc_feature
<222> (21)..(21)
<223> X = no amino acid or L

```

<220>  
<221> misc\_feature  
<222> (22)..(22)  
<223> X = no amino acid or A or S

<220>  
<221> misc\_feature  
<222> (23)..(23)  
<223> X = no amino acid or A or E

<220>  
<221> misc\_feature  
<222> (24)..(24)  
<223> X = no amino acid or A or V

<220>  
<221> misc\_feature  
<222> (25)..(25)  
<223> X = no amino acid or L or V

<220>  
<221> misc\_feature  
<222> (26)..(26)  
<223> X = no amino acid or L

<220>  
<221> misc\_feature  
<222> (27)..(27)  
<223> X = no amino acid or E

<220>  
<221> misc\_feature  
<222> (28)..(28)  
<223> X = no amino acid or E

<220>  
<221> misc\_feature  
<222> (29)..(29)  
<223> X = no amino acid or E

<220>  
<221> misc\_feature  
<222> (30)..(30)  
<223> X = no amino acid or I

<220>  
<221> misc\_feature  
<222> (31)..(31)  
<223> X = no amino acid or M

<220>  
<221> misc\_feature  
<222> (32)..(32)  
<223> X = no amino acid or D or M

```

<220>
<221> misc_feature
<222> (33)..(33)
<223> X = no amino acid or N or E

<400> 60
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1          5          10          15
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20          25          30

```

Xaa

```

<210> 61
<211> 112
<212> PRT
<213> Nicotiana alata

```

```

<220>
<221> misc_feature
<222> (2)..(2)
<223> X = A or G or K

```

```

<220>
<221> misc_feature
<222> (3)..(3)
<223> X = R or N or L

```

```

<220>
<221> misc_feature
<222> (5)..(5)
<223> X = L or I or M

```

```

<220>
<221> misc_feature
<222> (6)..(6)
<223> X = C or F or R

```

```

<220>
<221> misc_feature
<222> (7)..(7)
<223> X = F or L

```

```

<220>
<221> misc_feature
<222> (8)..(8)
<223> X = M or F or I

```

```

<220>
<221> misc_feature
<222> (9)..(9)
<223> X = A or S

```

```

<220>
<221> misc_feature
<222> (10)..(10)
<223> X = F or T or A

<220>
<221> misc_feature
<222> (11)..(11)
<223> X = A or L or V or F

<220>
<221> misc_feature
<222> (12)..(12)
<223> X = I or V or L or F

<220>
<221> misc_feature
<222> (13)..(13)
<223> X = L or I

<220>
<221> misc_feature
<222> (14)..(14)
<223> X = A or I or M

<220>
<221> misc_feature
<222> (15)..(15)
<223> X = M or A or F

<220>
<221> misc_feature
<222> (16)..(16)
<223> X = M or L

<220>
<221> misc_feature
<222> (17)..(17)
<223> X = L or I

<220>
<221> misc_feature
<222> (18)..(18)
<223> X = F or V

<220>
<221> misc_feature
<222> (19)..(19)
<223> X = V or T or L

<220>
<221> misc_feature
<222> (20)..(20)
<223> X = A or T or S

```

```

<220>
<221> misc_feature
<222> (21)..(21)
<223> X = Y or T

<220>
<221> misc_feature
<222> (22)..(22)
<223> X = E or G

<220>
<221> misc_feature
<222> (23)..(23)
<223> X = V or M

<220>
<221> misc_feature
<222> (24)..(24)
<223> X = no amino acid or G

<220>
<221> misc_feature
<222> (25)..(25)
<223> X = no amino acid or P

<220>
<221> misc_feature
<222> (26)..(26)
<223> X = no amino acid or M or V

<220>
<221> misc_feature
<222> (27)..(27)
<223> X = no amino acid or T

<220>
<221> misc_feature
<222> (28)..(28)
<223> X = no amino acid or I or S

<220>
<221> misc_feature
<222> (29)..(29)
<223> X = no amino acid or A or V

<220>
<221> misc_feature
<222> (30)..(30)
<223> X = Q or E

<220>
<221> misc_feature
<222> (32)..(32)
<223> X = no amino acid or Q

```

```

<220>
<221> misc_feature
<222> (33)..(33)
<223> X = R or Q

<220>
<221> misc_feature
<222> (34)..(34)
<223> X = E or I or T

<220>
<221> misc_feature
<222> (36)..(36)
<223> X = K or E

<220>
<221> misc_feature
<222> (37)..(37)
<223> X = T or A or S

<220>
<221> misc_feature
<222> (38)..(38)
<223> X = E or P or Q

<220>
<221> misc_feature
<222> (40)..(40)
<223> X = N or Q or H

<220>
<221> misc_feature
<222> (41)..(41)
<223> X = T or R

<220>
<221> misc_feature
<222> (43)..(43)
<223> X = P or K or H

<220>
<221> misc_feature
<222> (45)..(45)
<223> X = I or L or P or T

<220>
<221> misc_feature
<222> (47)..(47)
<223> X = I or F or S or V

<220>
<221> misc_feature
<222> (48)..(48)
<223> X = T or M or R or S

```

```

<220>
<221> misc_feature
<222> (49)..(49)
<223> X = K or D or E or A

<220>
<221> misc_feature
<222> (50)..(50)
<223> X = P or S

<220>
<221> misc_feature
<222> (51)..(51)
<223> X = P or S or N

<220>
<221> misc_feature
<222> (53)..(53)
<223> X = R or A

<220>
<221> misc_feature
<222> (54)..(54)
<223> X = K or T or S or N

<220>
<221> misc_feature
<222> (55)..(55)
<223> X = A or Y or V

<220>
<221> misc_feature
<222> (57)..(57)
<223> X = I or L or Q or H

<220>
<221> misc_feature
<222> (58)..(58)
<223> X = S or K or T or N

<220>
<221> misc_feature
<222> (60)..(60)
<223> X = K or G

<220>
<221> misc_feature
<222> (62)..(62)
<223> X = T or S or I or V

<220>
<221> misc_feature
<222> (63)..(63)
<223> X = D or G

```

```

<220>
<221> misc_feature
<222> (65)..(65)
<223> X = H or R or N

<220>
<221> misc_feature
<222> (67)..(67)
<223> X = S or P or R

<220>
<221> misc_feature
<222> (68)..(68)
<223> X = K or W or A or G

<220>
<221> misc_feature
<222> (69)..(69)
<223> X = I or L or F

<220>
<221> misc_feature
<222> (70)..(70)
<223> X = L or Q or P or R

<220>
<221> misc_feature
<222> (71)..(71)
<223> X = R or P

<220>
<221> misc_feature
<222> (72)..(72)
<223> X = R or K

<220>
<221> misc_feature
<222> (74)..(74)
<223> X = L or F

<220>
<221> misc_feature
<222> (77)..(77)
<223> X = K or S or R

<220>
<221> misc_feature
<222> (78)..(78)
<223> X = P or N or H

<220>
<221> misc_feature
<222> (80)..(80)
<223> X = no amino acid or V

```

```

<220>
<221> misc_feature
<222> (81)..(81)
<223> X = no amino acid or F

<220>
<221> misc_feature
<222> (82)..(82)
<223> X = no amino acid or D

<220>
<221> misc_feature
<222> (83)..(83)
<223> X = no amino acid or E or K

<220>
<221> misc_feature
<222> (84)..(84)
<223> X = no amino acid or K or I

<220>
<221> misc_feature
<222> (85)..(85)
<223> X = no amino acid or M or S

<220>
<221> misc_feature
<222> (86)..(86)
<223> X = no amino acid or T or I or S

<220>
<221> misc_feature
<222> (87)..(87)
<223> X = no amino acid or K or E

<220>
<221> misc_feature
<222> (88)..(88)
<223> X = no amino acid or T or V

<220>
<221> misc_feature
<222> (89)..(89)
<223> X = no amino acid or G or K

<220>
<221> misc_feature
<222> (90)..(90)
<223> X = no amino acid or A

<220>
<221> misc_feature
<222> (91)..(91)
<223> X = no amino acid or E

```

```

<220>
<221> misc_feature
<222> (92)..(92)
<223> X = no amino acid or I or T

<220>
<221> misc_feature
<222> (93)..(93)
<223> X = no amino acid or L

<220>
<221> misc_feature
<222> (94)..(94)
<223> X = no amino acid or A or V or G

<220>
<221> misc_feature
<222> (95)..(95)
<223> X = no amino acid or E

<220>
<221> misc_feature
<222> (96)..(96)
<223> X = no amino acid or E

<220>
<221> misc_feature
<222> (97)..(97)
<223> X = no amino acid or A

<220>
<221> misc_feature
<222> (98)..(98)
<223> X = no amino acid or K

<220>
<221> misc_feature
<222> (99)..(99)
<223> X = no amino acid or T

<220>
<221> misc_feature
<222> (100)..(100)
<223> X = no amino acid or L

<220>
<221> misc_feature
<222> (101)..(101)
<223> X = no amino acid or A or S

<220>
<221> misc_feature
<222> (102)..(102)
<223> X = no amino acid or A or E

```

<220>  
 <221> misc\_feature  
 <222> (103)..(103)  
 <223> X = no amino acid or A or V

<220>  
 <221> misc\_feature  
 <222> (104)..(104)  
 <223> X = no amino acid or L or V

<220>  
 <221> misc\_feature  
 <222> (105)..(105)  
 <223> X = no amino acid or L

<220>  
 <221> misc\_feature  
 <222> (106)..(106)  
 <223> X = no amino acid or E

<220>  
 <221> misc\_feature  
 <222> (107)..(107)  
 <223> X = no amino acid or E

<220>  
 <221> misc\_feature  
 <222> (108)..(108)  
 <223> X = no amino acid or E

<220>  
 <221> misc\_feature  
 <222> (109)..(109)  
 <223> X = no amino acid or I

<220>  
 <221> misc\_feature  
 <222> (110)..(110)  
 <223> X = no amino acid or M

<220>  
 <221> misc\_feature  
 <222> (111)..(111)  
 <223> X = no amino acid or D or M

<220>  
 <221> misc\_feature  
 <222> (112)..(112)  
 <223> X = no amino acid or N or E

<400> 61  
 Met Xaa Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Xaa  
 20 25 30

Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Ser	Xaa	Xaa	Phe	Xaa	Gly	Xaa	Cys	Xaa	Xaa
		35					40					45			
Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Glu	Xaa	Phe	Xaa	Xaa	Gly
	50					55					60				
Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Cys	Xaa	Cys	Thr	Xaa	Xaa	Cys	Xaa
65					70					75					80
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				85					90					95	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			100					105					110		